

CSS-II Device Key Sets Assignment Process

Version 1.1 (Oct/1999)

1. Introduction

In CSS-II, 4C Entity LLC assign the Device Key Sets to each Licensee. In this document, we describe the process to assign the Device Key Sets.

2. Device Key Sets

In CSS-II, there are 2448 ($=204 \times 12$) device keys. 2448 Device Keys has a matrix structure (204(0~203) rows and 12(0~11) columns)(Fig<2.1>).

	0th column	1st	2nd	...	9th	10th	11th
0th row	(0,0)	(0,1)	(0,2)	...	(0,9)	(0,10)	(0,11)
1st	(1,0)	(1,1)	(1,2)	...	(1,9)	(1,10)	(1,11)
2nd	(2,0)	(2,1)	(2,2)	...	(2,9)	(2,10)	(2,11)
...
...
201st	(201,0)	(201,1)	(201,2)	...	(201,9)	(201,10)	(201,11)
202nd	(202,0)	(202,1)	(202,2)	...	(202,9)	(202,10)	(202,11)
203rd	(203,0)	(203,1)	(203,2)	...	(203,9)	(203,10)	(203,11)

Fig<2.1> Matrix Structure of Device Keys

Device Keys assigned to each Licensee are

- (i) from 0th column, 1 device key is assigned.
- (ii) from 1st to 11th column, 6 device keys are assigned from each column.

So, $1+6 \times 11$ device keys are assigned to each Licensee.

We call these $1+6 \times 11$ device keys "Device Key Sets". 4C Entity LLC prepare 200 Device Key Sets.

3. Device Key Sets Assignment Process

Device Key Sets Assignment Process has 3 steps.

1. Licensee choose the number from 0 to 199, and tell it to 4C Entity LLC. We call this number "Licensee Choice Number".

2. In 4C Entity LLC, "Licensee Choice Number" is converted to "Chosen Device Key Number(0~199)" by the program "asnvl" on Windows PC.

CSS-II Device key
Sets Assignment

CSS-II Device Key Sets Assignment Process

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0th row	(0,0)	(0,1)	(0,2)	...	(0,9)	(0,10)	(0,11)
1st	(1,0)	(1,1)	(1,2)	...	(1,9)	(1,10)	(1,11)
2nd	(2,0)	(2,1)	(2,2)	...	(2,9)	(2,10)	(2,11)
	...						
	...						
	...						
201st	(201,0)	(201,1)	(201,2)	...	(201,9)	(201,10)	(201,11)
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Device Key Sets Assignment Process has 3 steps.

1. Licensee chose the number from 0 to 199, and tell it to 4C Entity LLC. We call this number "Licensee Choice Number".
2. In 4C Entity LLC, "Licensee Choice Number" is converted to "Chosen Device Key Number(0~199)" by the program "conv1" on Windows PC.

3. Then 4C Entity LLC issue the Device Key Sets depend on "Chosec Device Key Number" by using the program "conv2" on Windows PC.

(3.1) 1st, 4C Entity LLC assign the part of Device Keys

(a) position on the Matrix of all device keys

(b) device key on the 0th column

(c) four device keys on each the 1~11th column

(3.2) 2nd, 4C Entity LLC assign the rest of Device Keys

(a) two device keys on each 1~11th column

(ex) If Licensee C assigned those position on the Matrix,

(0,0)	(0,1)	(0,2)	(0,3)	...	(0,10)	(0,11)
	(1,1)	(1,2)	(1,3)	...	(1,10)	(1,11)
	(12,1)	(204,2)	(19,3)	...	(29,10)	(95,11)
	(29,1)	(67,2)	(10,3)	...	(78,10)	(75,12)
	(78,1)	(56,2)	(45,3)	...	(35,10)	(8,12)
	(32,1)	(37,2)	(56,3)	...	(12,10)	(18,12)

1st, assign those information and keys.

(a) position on Matrix (shown above)

(b) device key on 0th column

(0,0) 0x1234567890

(c) four device keys on each 1~11th column

(0,1) 0x91827ab8d7

(1,1) 0x6275df610a

(12,1) 0x81927d23f0

(29,1) 0xa81b6df233

(0,2) 0x9102b762fe

(1,2) 0xb671029813

(204,2) 0x8917bd789a

(67,2) 0x52739ba891

.....

(0,11) 0x71829badc2

(1,11) 0x81a7820b78

(95,11) 0x891abcd235

(75,11) 0x451891291e

4. Device Key Sets Assignment Operation

We ask you to assign device keys automatically using the program "conv1" and "conv2" on Windows PC.

(a) two device keys on each 1~11th column.

(78,1) 0x71829ba871

(32,1) 0xb78109237c

(56,2) 0x37298465ad

(37,2) 0x8192738372

(8,12) 0x90182bfe90

(18,12) 0x81b8ea0891

These two programs run in the "MS-DOS Prompt" on Windows 95.

4.1 In the case of 1st issue from the Licenses

1. login to the Windows PC.

2. Open the "MS-DOS prompt".

3. In the "MS-DOS prompt", change directory to the conversion program is installed

> cd _hex2key(return)

(In Windows95 English version, please replace # to backslash)

4. Run "conv1" program

> conv1(return)

Next, you have to input the "Licensee Choice Number".

> input Licensee Choice Number --> 123(return)

Then the result of conversion is displayed.

> Chosen Device Key Set Number is [29]

4. Device Key Sets Assignment Operation

We assign the Device Key Sets automatically using the program "conv1" and "conv2" on Windows PC.

"conv1" --- program convert "Licensee Choice Number" to "Chosen Device Key Sets Number"

"conv2" --- program output the Device Key Sets based on the "Chosen Device Key Sets"

These two programs run in the "MS-DOS Prompt" on Windows 95

4.1 In the case of 1st issue from the Licensee

1. login to the Windows PC.
2. Open the "MS-DOS prompt"
3. In the "MS-DOS prompt", change directory to the conversion program is installed

> cd \css2\key(return)

(In Windows98 English version, please replase ¥ to backslash)

4. Run "conv1" program

> conv1(return)

Next, you have to input the "Licensee Choice Number".

> Input Licensee Choice Number ---> 123(return)

Then the result of conversion is displayed.

> Chosen Device Key Set Number is [29]

5. Run "conv2" program

> conv2(return)

Next, you have to input the "Chosen Device Key Set Number" and "round of issue".

> Input Chosen Device Key Set Number ---> 29(return)

> Round of issue ---> 1(return)

"Round of issue" is the number of the issue, so you have to input 1.

Then you can get the "devkey-XXX-Y.txt" file which stored Device Key Sets.

XXX: Chosen Device Key Set Number

Y: Round of issue.

In this example, Device Keys are stored in "devkey-029-1.txt".

6. You have to write down the "Licensee name" and "Chosen Device Key Number" and "Date of the 1st issue" to the list manually, and manage it.

Licensee name	Chosen Device Key Number	Date of 1st issue	Date of 2nd issue
ABC Inc.	29	Oct/1/99	
XYZ Ltd.	102	Oct/2/99	

Fig<4.1> sample of the management list of Device Key Set assignment

7. Send back to the Licensee "devkey-XXX-Y.txt" file.

Licensee name	Chosen Device Key Number	Date of 1st issue	Date of 2nd issue
ABC Inc.	29	Oct/1/99	Jan/1/2003
XYZ Ltd.	102	Oct/2/99	

Fig<4.2> update the management list of Device Key Set assignment

7. Send back to the Licensee "devkey-XXX-Y.txt" file.

4.2 In the case of 2nd issue from the Licensee

1. login to the Windows PC.

2. Open the "MS-DOS prompt"

3. In the "MS-DOS prompt", change directory to the conversion program is installed

> cd %css2%key(return)

(In Windows98 English version, please replace % to backslash)

4. read the "Chosen Device Key Set Number" of the Licensee from the list.

5. Run "conv2" program

> conv2(return)

Next, you have to input the "Chosen Device Key Set Number" and "round of issue".

> Input Chosen Device Key Set Number ---> 29(return)

> Round of issue ---> 2(return)

"Round of issue" is the number of the issue, so you have to input 2.

Then you can get the "devkey-XXX-Y.txt" file which stored Device Key Sets.

XXX: Chosen Device Key Set Number

Y: Round of issue.

In this example, Device Keys are stored in "devkey-029-2.txt".

6. You have to write down the "Date of the 2nd issue" to the list manually, and manage it.

Licensee name	Chosen Device Key Number	Date of 1st issue	Date of 2nd issue
ABC Inc.	29	Oct/1/99	Jan/3/2005
XYZ Ltd.	102	Oct/2/99	

Fig<4.2> update the management list of Device Key Set assignment

7. Send back to the Licensee "devkey-XXX-Y.txt" file.

5. Practice of Device Key Sets Assignment Operation

To keep the consistency of Device Key Sets operation, you must remark some points described below.

(1) The file ".conv1_amount", ".conv1_issue_list" and ".conv1_log" in the directory "C:\css2\key" are very important. So, YOU DON'T DELETE OR MODIFY THESE THREE FILES.

(In Windows98 English version, please replace \ to backslash)

(2) The file ".conv2_issue_list" in the directory "C:\css2\key" is very important. So, YOU DON'T DELETE OR MODIFY THIS FILE.

(In Windows98 English version, please replace \ to backslash)

(3) In the directory "C:\css2\key", you must do actual Device Key Assignment Operation only.

YOU DON'T DO PRACTICAL DEVICE KEY ASSIGNMENT OPERATION IN THE DIRECTORY "C:\css2\key".

You have to do practical operation in the directory "C:\practice".

(In Windows98 English version, please replace \ to backslash)

(a) In the case of Practical 1st issue

1. login to the Windows PC.

2. Open the "MS-DOS prompt"

3. In the "MS-DOS prompt", change directory to the directory for practice

1. login to the Windows PC.

2. Open > cd \practice(return)

3. In the (In Windows98 English version, please replace \ to backslash)

4. Run "conv1" program

> conv1(return)

4. Run "conv2" program

Next, you have to input the "Licensee Choice Number".

> Input Licensee Choice Number ---> 123(return)

Then the result of conversion is displayed.

> Chosen Device Key Set Number is [29]

5. Run "conv2" program

> conv2(return)

Next, you have to input the "Chosen Device Key Set Number" and "round of issue" .

> Input Chosen Device Key Set Number ---> 29(return)

> Round of issue ---> 1(return)

"Round of issue" is the number of the issue, so you have to input 1.

Then you can get the "devkey-XXX-Y.txt" file which stored Device Key Sets.

XXX: Chosen Device Key Set Number

Y:Round of issue.

In this example, Device Keys are stored in "devkey-029-1.txt".

(b)In the case of 2nd practical issue

1. login to the Windows PC.
2. Open the "MS-DOS prompt"
3. In the "MS-DOS prompt", change directory to the directory for practice

> cd %practice(return)

(In Windows98 English version, please replace % to backslash)

4. Run "conv2" program

> conv2(return)



Procedure for Round Two Of Device Key Set

In the first round, CSS2 licensees can use about 4 million keys ($4 \times 11 = 4,194,304$). If the licensee uses 80% of these Keys and shows this fact with some evidence, the licensee may move forward to the second round.

CSS-11 Device key
Sets Assignment

